

E 18. (Twice Amended) The method of claim 40, wherein said carbonaceous material is carbon black.

E 19. (Amended) The method of claim 40, wherein said organic group is $(C_6H_4)-SO_3Na^+$, $(C_6H_4)-SO_3Li^+$, or $(C_6H_4)SO_3K^+$.

E 20. (Amended) The method of claim 40, wherein said organic group is $p-C_6H_4SO_2NH_2$ or $-C_6H_4NH_2$.

E 21. (Amended) The method of claim 40, wherein said organic group is hydrophilic.

E 22. (Amended) The method of claim 40, wherein said adsorbate is polar.

E 23. (Amended) The method of claim 40, wherein said adsorbate is water, ammonia, carbon dioxide, hydrogen sulfide, argon, oxygen, or methane.

E 24. (Amended) A method to adsorb an adsorbate comprising contacting said adsorbate with a modified carbonaceous material capable of adsorbing said adsorbate wherein said modified carbonaceous material comprises at least one organic group attached to a carbonaceous material, wherein said organic group comprises an aromatic group or a C_1-C_{12} alkyl group directly attached to the carbonaceous material, with the proviso that said carbonaceous material is not activated carbon, wherein said organic group is substituted with the functional group having the formula R, OR, COR, COOR, OCOR, a carboxylate salt, halogen, CN, NR₂, SO₃H, a sulfonate salt, OSO₃H, a OSO₃⁻ salt, NR(COR), CONR₂, NO₂, PO₃H₂, a phosphonate salt, a phosphate salt, N=NR, NR₃⁺X⁻, PR₃⁺X⁻, S_kR, SSO₃H, a SSO₃⁻ salt, SO₂NRR', SO₂SR, SNRR', SNQ, SO₂NQ, CO₂NQ, S-(1,4-piperazinediyl)-SR, 2-(1,3-dithianyl) 2-(1,3-dithiolanyl), SOR, or SO₂R, wherein R and R', which are the same or different, are independently hydrogen, branched or unbranched C_1-C_{20} substituted or unsubstituted, saturated or unsaturated hydrocarbon, k is an integer ranging from 1-

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8, anion X⁻ is a halide or an anion derived from a mineral or organic acid, Q is (CH₂)_w, (CH₂)_xO(CH₂)_z, (CH₂)_xNR(CH₂)_z, or (CH₂)_xS(CH₂)_z, where w is an integer from 2 to 6 and x and z are integers from 1 to 6, wherein said hydrocarbon is alkyl, alkenyl, alkynyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted alkylaryl, or substituted or unsubstituted arylalkyl.

Sub F's 2 40. (Amended) A method to adsorb an adsorbate comprising contacting said adsorbate with a modified carbonaceous material capable of adsorbing said adsorbate wherein said modified carbonaceous material comprises at least one organic group attached to a carbonaceous material, wherein said organic group comprises an aromatic group or a C₁-C₁₂ alkyl group directly attached to the carbonaceous material, with the proviso that said carbonaceous material is not activated carbon, wherein said organic group is an aromatic group of the formula A_yAr- wherein Ar is an aromatic radical and A is a substituent on the aromatic radical, and y is an integer from 1 to the total number of -CH radicals in the aromatic radical.

E 3 *cont* 20 45. (Amended) A method to adsorb an adsorbate comprising contacting said adsorbate with a modified carbonaceous material capable of adsorbing said adsorbate wherein said modified carbonaceous material comprises at least one organic group attached to a carbonaceous material, wherein said organic group comprises an aromatic group or a C₁-C₁₂ alkyl group directly attached to the carbonaceous material, with the proviso that said carbonaceous material is not activated carbon, wherein said organic group is a C₁-C₁₂ alkyl group having at least one acidic group having a pKa of less than 11 or at least one salt of an acidic group having a pKa of less than 11, or a mixture thereof.

V 5 46. (Amended) The method of claim *20*, wherein there is more than one type of

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organic group attached to said carbonaceous material.

E4 cont
~~16~~ 47. (Amended) The method of claim ~~40~~, wherein some of the carbonaceous material has been modified with one organic group and another portion of the carbonaceous material has been modified with a different organic group.

~~19~~ 48. (Amended) The method of claim ~~39~~, wherein there is more than one type of organic group attached to said carbonaceous material.

~~1750.~~ (Amended) The method of claim ~~40~~, wherein said carbonaceous material is material obtained by the compaction of small carbon particles.

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~~1~~ 51. (Amended) A method to adsorb an adsorbate comprising contacting said adsorbate with a modified carbonaceous material capable of adsorbing said adsorbate wherein said modified carbonaceous material comprises at least one organic group attached to a carbonaceous material, wherein said organic group comprises an aromatic group or a C₁-C₁₂ alkyl group directly attached to the carbonaceous material, with the proviso that said carbonaceous material is not activated carbon, wherein said carbonaceous material is obtained by the pyrolysis of fuel oil or polymeric precursors.
